ABSTRACT

An arithmetic unit detects difference α $(= X - Y)$ between a sound source arrival azimuth $X°$ of a sound wave, which is transmitted from a sound source buoy and is directly received in a wave receiving buoy, to a reference axis of the wave receiving buoy, and a target arrival azimuth $Y°$ of a reflective sound, which is reflected by a target, to the reference axis of the wave receiving buoy. The arithmetic unit detects an azimuth angle β of the sound source buoy on the basis of position information (latitude and longitude) of the sound source buoy and wave receiving buoy that is obtained by using GPS. Then, the arithmetic unit detects the azimuth (target azimuth) of the target to a magnetic north azimuth by the operation of $(\beta - \alpha)$.